

ATTACHMENT I

764 / SECTION 9 ■ DENTAL AND ORAL DISORDERS

foreconomic reasons). Complete dentures are removable appliances used when no teeth remain. They help a patient chew and improve speech and appearance, but they do not provide the efficiency or tactile sensations of good natural dentition.

Generally, all removable dental appliances are removed before throat surgery, general anesthesia, or convulsive shock therapy so that they are not lost, broken, aspirated, or swallowed during the procedure. On removal, they should be stored in water to prevent dimensional changes that may occur with drying. However, some anesthesiologists believe that leaving appliances in place aids the passage of an airway tube, keeps the face in a more normal shape so that the mask fits better, prevents natural teeth from injuring the opposing gingiva of a completely edentulous jaw, and does not interfere with laryngoscopy.

PULPITIS

Inflammation of the dental pulp

Pulpal disease (pulpitis) and its local sequelae—necrosis of the pulp, apical periodontitis, periapical abscess, cellulitis, and osteomyelitis of the jaw—can occur when caries progresses deeply in the dentin, when a tooth requires multiple invasive procedures, or when trauma disrupts the lymphatic and blood supply to the pulp. Inflammation that would easily subside in other parts of the body leads to necrosis in the rigidly encased (by the dentin) pulp because edema cannot occur there without compromising circulation.

If dental infection spreads from maxillary teeth, it may cause purulent sinusitis, meningitis, brain abscess, orbital cellulitis, and cavernous sinus thrombosis. Infection from the mandibular teeth may cause Ludwig's angina, parapharyngeal abscess, mediastinitis, pericarditis, empyema, and jugular thrombophlebitis.

Symptoms and Diagnosis

In reversible pulpitis, pain is felt when a stimulus (usually cold or sweets) is applied to the tooth. When the stimulus is removed, the pain ceases within a few seconds.

Irreversible pulpitis produces pain that lingers for minutes after the stimulus is removed or that occurs spontaneously. A pa-

tient may have difficulty locating the precise tooth that is the source of the pain, even confusing the maxillary and mandibular arches (but not the left and right sides of the mouth) because the pulp has no proprioceptive fibers. The pain may then cease for several days because of pulpal necrosis. When bacteria or their metabolites exit through the apical foramen, thereby causing inflammation in the adjacent periodontal ligament, the tooth becomes exquisitely sensitive to pressure and percussion. As a periapical (dentolveolar) abscess forms, the tooth is elevated from its socket and feels "high" when biting.

Treatment

In reversible pulpitis, pulp vitality can be maintained if the tooth is treated, usually by caries removal and then filled.

Irreversible pulpitis and its sequelae require endodontic (root canal) therapy or tooth extraction. Distant sequelae demand extraction to permit drainage. After a root canal procedure, adequate healing is evidenced clinically by resolution of symptoms and radiographically by bone filling in the radiolucent area at the root apex. If the patient has systemic signs of infection, an antibiotic (penicillin VK 500 mg q 6 h; for patients allergic to penicillin, clindamycin 300 mg or 300 mg q 6 h or metronidazole 500 mg q 8 h) is effective. If symptoms persist or worsen, medical consultation is advisable, and the tooth may need to be extracted.

Rarely, subcutaneous or mediastinal emphysema develops after use of a high-speed air turbine dental drill or compressed air forcing a root canal or an extraction when air is forced into the tissues around the tooth socket and dissects along fascial planes. Acute onset of jaw and cervical swelling on palpation is diagnostic. Treatment is usually not required, although some clinicians prescribe prophylactic antibiotics.

MALOCCLUSION

Deviation from the normal contact relationship of the maxillary and mandibular teeth.

Occlusion should be checked on both sides of the mouth by retracting each side with a tongue depressor while the pa-

tient bites. Normally, each dental arch has teeth in side-by-side contact, a smooth curve, and the maxillary teeth overlap the upper third of the mandibular anterior teeth. The buccal (inner) cusps of the maxillary posterior teeth fit into the corresponding cusps of the mandibular posterior teeth. On each side of the mouth, the anterior cusp of the first permanent molar fits into the groove of the mandibular first molar. The outer parts of all maxillary teeth, the lips and cheeks are displaced between the teeth so that they are not in contact. The lingual (inner) surfaces of the teeth lie in a smaller arc than those of the upper teeth, confining the tongue and reducing the likelihood of its being injured. The maxillary teeth should contact the corresponding mandibular teeth, so that the powerful masticatory forces (which may be 100 lb in the molar region) are well distributed. If these forces are applied to the wrong teeth, those teeth are likely to be eventually damaged.

Malocclusion is commonly classified into three major forms (Angle's classification). Class I, in which the upper and lower teeth occlude normally but the anterior teeth are crowded or malposed; Class II, in which the upper and lower molars retrude excessively and the facial profile is convex; and Class III, in which the mandible and lower teeth protrude in relation to the upper teeth. In crossbite, the buccal cusps of one arch and the mandibular teeth are external to the corresponding maxillary teeth.

Malocclusion often results from disproportionate jaw and tooth size—i.e., a jaw too small or teeth are too large for the jaw to accommodate them in proper alignment. Malocclusion has many other causes (Table 106-1), such as tooth loss. When permanent teeth are lost, adjacent teeth may be tilting and opposing teeth extrude, causing malocclusion, unless a bridge or partial denture is used to prevent these movements. When children lose deciduous teeth prematurely, the more distal in the arch or the posterior teeth often drift forward, not leaving sufficient space for other permanent teeth to erupt. This shift can be prevented by using an appliance to maintain the space. In mandibular dysostosis, deciduous teeth are retained too long and many permanent